

REMARKS

The Examiner rejected claims 1, 2, 4-11, 14, 15 and 17 under 35 U.S.C. § 102(b) as allegedly anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as allegedly obvious over JP2000-63433.

The Examiner rejected claims 1-30 on the ground of nonstatutory obviousness-type double patenting as allegedly being unpatentable over claims 1-17 of U.S. Patent No. 7,081,326.

Applicants respectfully traverse the double patenting rejections, as well as the § 102 and § 103 rejections, with the following arguments.

35 U.S.C. § 102(b) and 35 U.S.C. § 103(a)

The Examiner rejected claims 1, 2, 4-11, 14, 15 and 17 under 35 U.S.C. § 102(b) as allegedly anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as allegedly obvious over JP2000-63433.

Since claim 11 has been canceled, the rejection of claim 11 under 35 U.S.C. § 102(b) or 35 U.S.C. § 103(a) is moot.

Applicants note that claim 12 has been rewritten in independent form and claims 14, 15 and 17 depend from claim 12. Therefore, since claim 12 was not rejected under 35 U.S.C. § 102(b) or 35 U.S.C. § 103(a), and since claims 14, 15 and 17 depend from claim 12, Applicants maintain that claims 14, 15 and 17 are not unpatentable under 35 U.S.C. § 102(b) or 35 U.S.C. § 103(a).

Applicants respectfully contend that JP2000-63433 does not anticipate claim 1 under 35 U.S.C. § 102(b) and claim 1 is not obvious over JP2000-63433 under 35 U.S.C. § 103(a), because JP2000-63433 does not teach or suggest each and every feature of claim 1.

As an example of why JP2000-63433 does not anticipate claim 1 under 35 U.S.C. § 102(b) and claim 1 is not obvious over JP2000-63433 under 35 U.S.C. § 103(a), JP2000-63433 does not teach or suggest the feature: “wherein the resist polymer is adapted to chemically react with the additive in the presence of the acid ... to generate a product that is insoluble in the developer solution”.

The Examiner argues that the claimed additive Q-OH is represented in JP2000-63433 as an alcohol organic solvent listed in Par. 68 of JP2000-63433.

In response, Applicants cite lines 4-5 within Par. 69 of JP2000-63433, which recites that “the organic solvent in the photoresist film 2 is removed by evaporating so that the photoresist film is solidified”. Therefore, because organic solvent is removed by evaporating so that the photoresist film is solidified”, the organic solvent is not adapted to chemically react with the additive in the presence of the acid ... to generate a product that is insoluble in the developer solution, as required by claims 1. In fact, it is contrary to the intent of removing the organic solvent, by evaporating so that the photoresist film is solidified, for the organic solvent to chemically react with the additive in the presence of the acid ... to generate a product that is insoluble in the developer solution”.

Based on the preceding arguments, Applicants respectfully maintain that JP2000-63433 does not anticipate claim 1 under 35 U.S.C. § 102(b) and claim 1 is not obvious over JP2000-63433 under 35 U.S.C. § 103(a), and that claim 1 is in condition for allowance. Since claims 2 and 4-10 depend from claim 1, Applicants respectfully contend that claims 2 and 4-10 are likewise in condition for allowance.

Double Patenting

The Examiner rejected claims 1-30 on the ground of nonstatutory obviousness-type double patenting as allegedly being unpatentable over claims 1-17 of U.S. Patent No. 7,081,326 (“USP ‘326”).

Applicants respectfully contend that claims 1, 12, and 18 are not unpatentable over claims 1-17 of USP ‘326, because USP ‘326 does not teach or suggest each and every feature of claims 1, 12, and 18.

As a first example of why claims 1, 12, and 18 are not unpatentable over claims 1-17 of USP ‘326, USP ‘326 does not teach or suggest the feature:

“wherein the resist polymer is adapted to chemically react with the additive in the presence of the acid **in a non-crosslinking chemistry** to generate a product that is insoluble in the developer solution” (emphasis added) (claims 1 and 12); and

“wherein the radiation causes the acid generator to generate acid in the first portion of the resist layer **in a non-crosslinking chemistry**” (emphasis added) (claim 18).

The Examiner argues that “the instant claims do not exclude ... exclude crosslinking of the polymers using the alcohol additives”.

In response, Applicants respectfully note that the amended claims 1 and 18 comprise preceding limitation pertaining to “a non-crosslinking chemistry”.

Applicants note that the specification, page 7, lines 2-10 of the present patent application recites: “The present invention discloses negative photoresist compositions which may be cured without a crosslinker. A negative photoresist is said to be ‘cured’ when chemically transformed

into a reaction product that is insoluble in an aqueous base developer solution. Hereinafter, a ‘crosslinker’ is a chemical additive that may be included in curable photoresist compositions, wherein the crosslinker may bond to reactive side groups on a polymeric backbone of photoresist compositions during their cure, resulting in a crosslinked photoresist that may become insoluble in aqueous base developer solutions. Hereinafter, ‘non-crosslinking’ chemistry means the negative photoresist compositions of the present invention may be cured without use of a crosslinker.”

In contrast, claims 1-17 of USP ‘326 do not recite the preceding feature relating to use of a non-crosslinking chemistry.

In fact, USP ‘326, col. 1, lines 7-10 recite: “The present invention relates generally to the fabrication of semiconductor devices and, more particularly, to a negative photoresist composition **having a crosslinking component** characterized by a multihydroxy functionality.” (emphasis added).

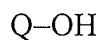
In addition, USP ‘326, col. 5, lines 42-45 recite: “The negative photoresist compositions of the present invention make use of **a crosslinking reaction** between an alkali-soluble resist polymer containing an alkoxymethylamido group and a multi-hydroxy crosslinking agent.” (emphasis added).

In addition, the example of Reaction 1 in USP ‘326, col. 15, lines 1-42 is a cross-linking reaction as described in USP ‘326, col. 14, lines 55-67.

Accordingly, claims 1, 12, and 18 are not unpatentable over claims 1-17 of USP ‘326.

As a second example of why claims 1, 12, and 18 are not unpatentable over claims 1-17

of USP '326, USP '326 does not teach or suggest the feature: "a hydroxy-containing additive having the structure:



wherein Q is one of an alkyl group with 4 to 50 carbons, an aryl group with 4 to 50 carbons, a semi- or perfluorinated alkyl group with 4 to 50 carbons, a semi- or perfluorinated aryl group with 4 to 50 carbons, an alkaryl group with 4 to 50 carbons, an aralkyl group with 4 to 50 carbons, a semi- or perfluorinated alkaryl group with 4 to 50 carbons, and a semi- or perfluorinated aralkyl group with 4 to 50 carbons".

The Examiner argues that "the instant claims do not exclude additional OH substituents on the groups for "Q" ...".

In response, Applicants respectfully note that the aforementioned groups in the preceding description of Q in claims 1, 12, and 18 cannot, by definition of said aforementioned groups, include an OH group.

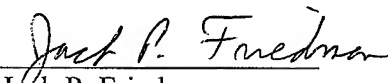
Accordingly, claims 1, 12, and 18 are not unpatentable over claims 1-17 of USP '326.

Based on the preceding arguments, Applicants respectfully maintain that claims 1, 12, and 18 are not unpatentable over claims 1-17 of USP '326. Since claims 2-10 depend from claim 1, Applicants respectfully contend that claims 2-10 are likewise not unpatentable over claims 1-17 of USP '326. Since claims 13-17 depend from claim 12, Applicants respectfully contend that claims 13-17 are likewise not unpatentable over claims 1-17 of USP '326. Since claims 19-30 depend from claim 18, Applicants respectfully contend that claims 19-30 are likewise not unpatentable over claims 1-17 of USP '326.

CONCLUSION

Based on the preceding arguments, Applicants respectfully believe that all pending claims and the entire application meet the acceptance criteria for allowance and therefore request favorable action. If the Examiner believes that anything further would be helpful to place the application in better condition for allowance, Applicants invites the Examiner to contact Applicants' representative at the telephone number listed below. The Director is hereby authorized to charge and/or credit Deposit Account 09-0458.

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